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Environmental Public Health Tracking Conference
Wyndham Philadelphia | March 24-26, 2004

Geographic Information Systems and Spatial Statistics: Methods Used and Lessons Learned from Linking Health and Environmental Data in the UK and the European Union

Plenary and Concurrent Session Abstract Form

Moderator:

Wayne Ball, PhD, Program Manager, Environmental Epidemiology, Utah Department of Health

Presenters:

Lars Jarup, MSc, MD, PhD, FFPH, Reader in Environmental Medicine and Public Health, and Assistant Director, the Small Area Health Statistics Unit (SAHSU), Department of Epidemiology and Public Health, Imperial College London
The Small Area Health Statistics Unit and the EUROHEIS Project – an Overview

Linda Beale, BA, MA, PhD, GIS Research Associate, SAHSU, Department of Epidemiology and Public Health, Imperial College London
GIS Methods – Use and Misuse

Sylvia Richardson, PhD, DSM, Professor of Biostatistics, Department of Epidemiology and Public Health, Imperial College London
Statistical Methodology for Disease Mapping: Rate Smoothing and Issues of Sensitivity and Specificity

Nicky Best, BSc, MSc, PhD, Reader in Statistics and Epidemiology, Department of Epidemiology and Public Health, Imperial College London
Statistical Modelling of Environment-Health Relationships: Handling Ecological Bias

Lars Jarup, Peter Hambly (Database Manager) SAHSU, Department of Epidemiology and Public Health, Imperial College London
The Rapid Inquiry Facility – a Tool for Environmental Health Risk Assessment (Demonstration)

Session Abstract:

Over the past fifteen years, the Small Area Health Statistics Unit (SAHSU) of Imperial College London has been working to assess the human health risk of environmental factors. The broad range of activities undertaken by SAHSU include developing and maintaining health and environmental exposure databases; conducting environmental epidemiologic research studies; responding to ad hoc queries about unusual clusters of disease; developing small-area statistical methods and exposure assessment procedures; and developing a computerized software system called the Rapid Inquiry Facility that uses geographical information software for risk assessment and disease mapping. Staff from SAHSU will share lessons learned and examples from their work in the environment/health arena. Speakers will discuss the role of GIS in data integration, health mapping, population modeling, and exposure assessment and will provide an overview of statistical methods and issues relating to analysis of small-area level data. The Rapid Inquiry Facility will be demonstrated and its use in the European Health and Environment Information System (EUROHEIS) project discussed.

Learning Objectives:

After attending this session, the participant will be able to:

1. Understand uses and limitations of Geographic Information Systems in linking environmental and health data
2. Identify methods and issues in spatial analysis
3. Discuss the functionality and utility of the Rapid Inquiry Facility as a tool for disease and exposure mapping and risk assessment.